POSITION PAPER
Recommendations Concerning Digital Communication
Using Emoji in Legal and Medical Interpreting

The purpose of this paper is to define what emoticons, emoji, smileys, and stickers are and to underscore the notion that deciphering the meaning of these symbols can be much more problematic than it appears to be at first glance. This is of particular importance in high-stakes settings such as medical and legal interpreting encounters where any misinterpretation of these elements can have grave consequences.

What are emoticons, emoji, smileys, and stickers?

In short, we could say that they are all graphic representations of ideas or feelings. Some believe they are all synonymous. A short explanation of the differences between them based purely on technology is that emoticons are keyboard characters while emoji are Unicode pictographs Stickers, on the other hand, are non-Unicode emoji. And Smileys are emoticons and emoji. Given this overlap, there is significant confusion in the public and the press about what they are—and with good reason.

Definitions

For our purposes, we created a definition of Stickers, while for the other terms, definitions from Merriam Webster are used:

Emoji: any of various small images, symbols, or icons used in text fields in electronic communication (as in text messages, email, and social media) to express the emotional attitude of the writer, convey information succinctly, communicate a message playfully without using words, etc.

Emoticon: a group of keyboard characters (such as :-)) that typically represents a facial expression or suggests an attitude or emotion and that is used especially in computerized communications (such as email).

Smiley: noun, plural smileys. Also called smiley face.
1. *a digital icon, a sequence of keyboard symbols, or a handwritten or printed equivalent, that serves to represent a facial expression, such as :-) for a smiling face or ;-) for a winking face.*

2. Usually **smile face** *a drawing of a face consisting of a usually yellow circle with an upturned curve for a smile and two dots for eyes.*

*   **Stickers**: *Stickers similar to emoji but are added by third party applications like Facebook Messenger or iMessage and are not limited by a standard [like Unicode], allowing them to be much more custom and expanding much quicker. Since they are not standardized though, they rarely work cross platform, while emoji are generally more universal.*

Various other dictionaries report these terms as synonymous (e.g. **Stickers**: A synonym for "emote," "emoticon," "emoji," etc.), although there are differences among them and each has their own history and evolution.

For the purposes of this text, we will use the term graphicons (graphical icons) to refer to these elements in computer-mediated communication. While this term is broad and tends to include other items like GIFs (images stored in graphics interchange format.), we use it here to refer specifically to emoticons, emoji, smileys and stickers as defined above.

Interesting Facts

An emoji (specifically the "face with tears of joy emoji" 😂) was the Oxford Dictionaries' Word of the Year in 2015. This was a first.

Additionally in 2019, emoji and emoticons together as one category were named "word" of the year by la Fundación del español urgente.

Emoji seem to be growing in popularity and they seem to represent an evolution of emoticons. Emoji tend to be purely symbolic, pretty small and simple in design, while stickers seem to incorporate words on a regular basis and be larger in size and more complex in design. Emoji tend to be static, while stickers can be animated on several social media platforms but are not the same as animated GIFS (images stored in graphics interchange format.) Some emoji have emoticon equivalents but none of these are equivalent to texting acronyms/abbreviations such as LOL, YOLO, etc.

It is also important to note that this is an ever-changing field and some of the information contained in this document is more than likely to be subject to change over time. In fact, a new element was introduced into the mix when on July 17, 2021 (World Emoji Day), Facebook introduced sound to accompany certain emoji in its messenger function, calling these new elements Soundmojis.

Important considerations regarding graphicons

Consideration #1: Graphicons are not universal but rather culture-dependent

Let's take the example of the emoticons and emoji. The same emoticon can be represented using different punctuation marks or other symbols. There are two different styles of emoticons: horizontal and vertical, and their use is also subject to cultural influences. Horizontal emoticons are more popular In Western cultures where language is read left to right. Vertical emoticons are more popular in Asian cultures where they display and are read from top to bottom.

	HORIZONTAL	VERTICAL
HAPPY	:)	^_^
SAD	:(	T_T
SURPRISE	:O	@@

Image source:
https://blog.humancomputation.com/?m=201307

While cultures and contexts play a significant role, the Eastern/Western divide is not cut and dry. A country's spoken language has a higher impact in determining the emoticon style than geography, according to some studies. (Paigebuck, B., Spiliotopoulos, B. T., Vempaty, B. A., Singla, B. A., Jurgens, B. D., Emomeni, B., Zhong, B. C., Disheng, B., Arjun4787, B., & Park, B. J., 2013) For example, despite being in the East, Twitter users in Indonesia tend to use horizontal emoticons.

Emoji also face (and are read) left to right in almost all cases, which does not follow the flow of text of those languages which are oriented right to left like Arabic or Hebrew.

While emoji tend to be relatively standard across cultures, emoji created for use in the Arab world tend to have larger eyes than elsewhere. Some research suggests that Eastern and Western cultures are different in their use of mouth versus eye cues when interpreting emotions. According to the research, the norm in Western cultures is to display the overt emotion while in Eastern cultures, the norm is to present more subtle emotion. Westerners interpret facial emotional expressions through the mouth region. Conversely, Eastern cultures focus more on the eyes. The researchers also found that such differences extend to written and paralinguistic signals such as emoji and, consequently, this has implications for digital communication. This explains why most of the emoji that were made specifically for the Arab world come with very large eyes. (Gao, B., & VanderLaan, D. P., 2020)

Despite the relative standardization of emoji across cultures, different cultures use them differently. For example, English-speakers' use of emoji is much more clear, concise, and direct, while Japanese speakers use them in a more decorative fashion. In addition to cultural influences, gender also plays a role in the usage of emoticons and their format. Some studies

Digital Communication Using Emoji

show that women tend to use more graphicons than men, and often more than once (i.e., multiple emoticons attached to the same message). (Freshtrax, 2015)

With respect to braille, there is not yet uniformity in how emoticons are displayed despite some effort to do so, leading to inconsistency in the way they are used and the way they are perceived (received). (Commonwealth Braille and Talking Book Cooperative, 2005)

Consideration #2: A picture is worth a thousand words—but which words?

Emoji are being used to communicate messages. The message sender makes the first decision as to what images to use to express their own moods and feelings. On the recipient side, being images, emoji are subject to interpretation, and that interpretation is also subject to the mood and bias of the message recipient.

The success of any communication relies on a common agreement on the meaning of the message. Both mood and personal bias can interfere with this common agreement, be it within the confines of one language/culture or through intercultural communication.

Culture, and the ability to perceive culture, can also significantly impact one's interpretation of the message when the message is embedded in an image. Take, for example, an image which is not currently an emoji, but is an image used by many: 卐 卍. To Westerners, this symbol is most closely associated with the Nazis and their ideology. To many in the East, this symbol is also known as the "manji", a Chinese character that means "good fortune" in Japanese. It is an ancient religious icon in the cultures of Eurasia. This symbol can be traced back to Hinduism and Buddhism. It is used as a symbol of divinity and spirituality in Indian religions, including Hinduism, Buddhism, and Jainism.

Culture has a significant impact on the types of emoji most likely to be used and how they are used. A survey looking at over a billion instances of emoji use identified a number of cultural differences in various regions around the world. North Americans showed a tendency towards violence in their emoji use; they had lots of uses of the gun symbol. French smartphone users were the most likely to use the heart icon – four times more likely than any other nation, in fact. Russians used emoji relating to romance and cold weather, while the Spanish favored party-related ones. (TranslateMedia, 2016)

Culture is also related to how emoji are interpreted. For example, the clapping hands emoji is frequently interpreted as literal applause or implied approval in Western cultures, but in China this emoji can now mean making love. Additionally, the angel emoji, which in Western cultures is commonly seen as indicating a good deed done by someone or as proclaiming someone's innocence, but for someone in China this emoji connotes death.

It is also important to note that culture, much like language itself, is never frozen in time and therefore not monolith. Changes in culture over time may also represent changes in emoji meanings over time.

Certain emoji also represent gestures, such as the peace sign ✌️, the ok sign 👌, or the thumbs up sign 👍. It is well documented that these gestures are culturally dependent, and the corresponding emoji are as well. Some gestures also change meaning over time. For example, the OK gesture in the USA has changed meaning in some circles and the corresponding emoji is now associated with white supremacy much like the gesture itself

Additionally, an example of a gesture sign that is acceptable and appropriate in one culture (USA) is the crossed fingers sign. However, that sign is improper and insulting in Vietnamese culture. This is also going to be true of the use of the corresponding emoji 🤞.

It is also important to note that some emoji have been coopted for use to mean certain things in certain circles. This is particularly true of groups who may wish to hide their true intentions from prying eyes. Take, for example, the use by some of the maple leaf emoji to indicate marijuana.

With respect to the DeafBlind community, emoji and stickers and smileys may appear to be less of an issue as these are visual icons. Nonetheless, when we consider those who are blind separately, there are some issues to address. The blind must use some form of AI accessibility tool to access these graphicons. As a result, what they may hear is filtered through the tool and may be described incorrectly. Depending on the platform used, these icons can be read by more or less than adequate accessibility tools. Regardless of the AI tool used, the connotative meaning of these symbols can be misread by these same tools, especially when the emoji are used in an unusual or idiomatic way (as in not recognizing a sarcastic use of a smiley face in the message "Go screw yourself!" 😃). Additionally, using emoji in the middle of words can render the accessibility tool useless and completely muddle the intended message for the recipient. Finally, it may be difficult for someone with low vision to distinguish between hand-based or face-based emoji. For example, they may have difficulty seeing the difference between 🤙 and ✍️ which means the potential for miscommunication via emoji is great in these instances.

Consideration #3: There is no universally recognized definitive source of meaning for these images.

There is currently no universally recognized emoji dictionary. There are websites calling themselves emoji "dictionaries", but they do not function as dictionaries in the sense of being final arbiters of meaning. In fact, many allow users to introduce new meanings into the mix. One example is: The Emoji Dictionary. In this "dictionary" the opening page clearly states this purpose:

Digital Communication Using Emoji

The Emoji Dictionary is the first crowdsourced Emoji resource on the web. Similar to Wikipedia, we rely on the community to share, build and define the Emoji that have so long remained shrouded in mystery.

*Click on an Emoji to learn its definition or add your own!*

Image source: https://emojidictionary.emojifoundation.com/

Consideration #4: Emoji appear differently on different platforms

Emoji appear differently depending on the platform in which they are viewed. In fact, depending upon the platform, some emoji may even appear to become much more like emoticons than emoji. This fact is not widely known. The very different appearance of an emoji can influence the interpretation of the meaning of the message.

Example: unamused face

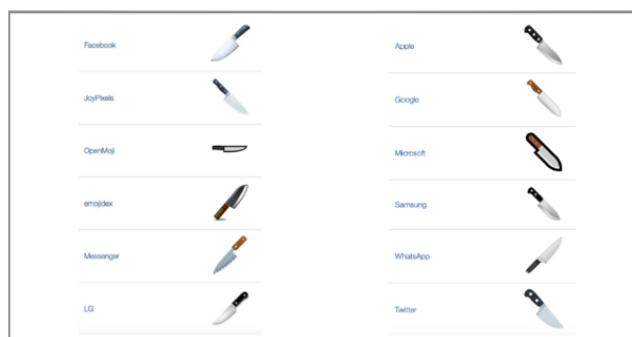Image source: *#8 EMOJIS, EMOTICONS AND SMILEYS – A PRIMER* [Video]. YouTube. https://youtu.be/G
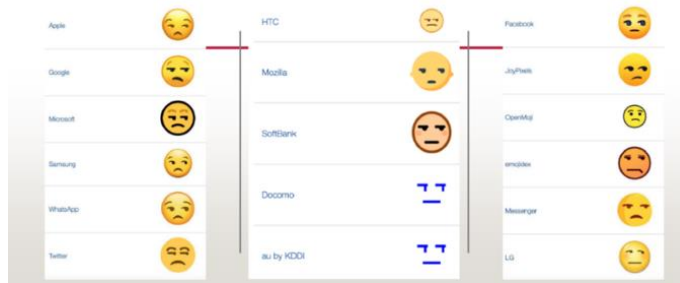
Example: smirking face

Image source: *#8 EMOJIS, EMOTICONS AND SMILEYS – A PRIMER* [Video]. YouTube. https://youtu.be/GFwxbbxgwsI
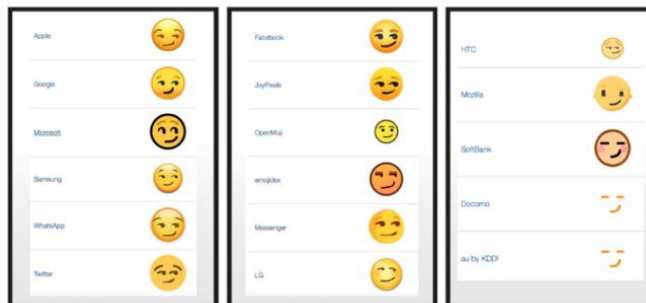
Example: knife

Image source: *#8 EMOJIS, EMOTICONS AND SMILEYS – A PRIMER* [Video]. YouTube. https://youtu.be/GFwxbbxgwsI

Digital Communication Using Emoji

Furthermore, certain platforms allow for the animation of emoji, while others don't—for now. This can further complicate the comprehension of their message. For example, what does one make of a throbbing smiley face emoji accompanied by a scream sound?

Additionally, some platforms do not render emoji posted in a different platform as emoji at all. For example, the heart emoji, when used as synonymous with a "like" button in Apple's platform, is rendered as a word message in Android when texting across platforms as follows : Liked "original message".

Let's look at the exchange between someone texting on an Apple iPhone to someone with an Android phone:

        iPhone user: How was your birthday yesterday?
        Android user: Had a great time! Went to a restaurant with friends.
        iPhone user then hits the like button, which appears as a heart emoji to Iphone user. (❤️)
        The message appears on Android end as pure text:
        Liked "Had a great time! Went to a restaurant with friends."
        And not as ❤️.

Consideration #5: Emoji conceptual rendering changes over time

Certain renderings of concepts through emoji have also changed over time--particularly the ones expressing violet intent. For example, the gun emoji was changed from a real gun to a toy in 2016 in Apple's platform, and most major other platforms followed suit by 2018, but not all. This has clear implications for the threat level that the emoji can convey.
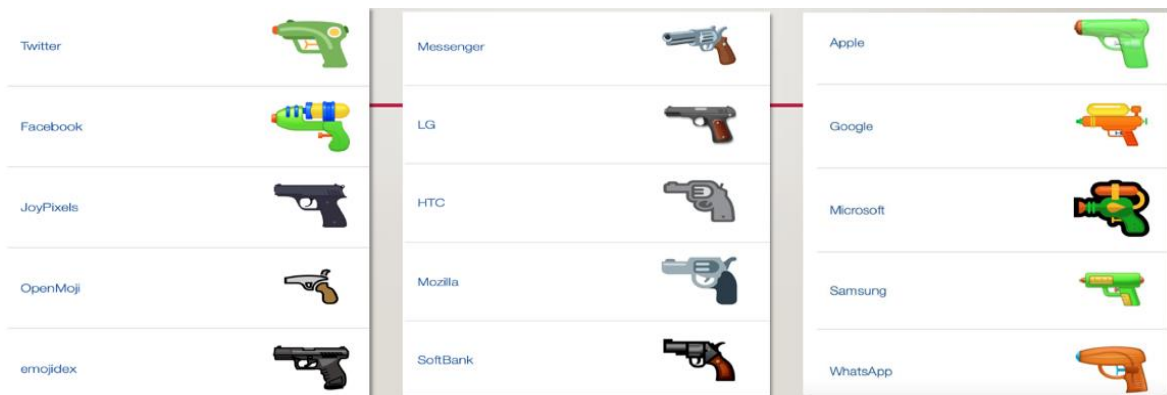
Image source: *#8 EMOJIS, EMOTICONS AND SMILEYS – A PRIMER* [Video]. YouTube. https://youtu.be/GFwxbbxgwsI
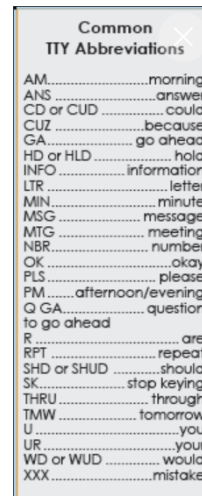

And signed language interpreters are not at all excluded from having to deal with this issue. Text messages are becoming more common amongst the Deaf and allowing easier autonomous communication amongst the Deaf and hearing world. But the Deaf have put their own twist on

this form of communication. While they may use emoji, their own form of text speech is also a complicating factor, as seen in the quote below:

"Unlike today's textspeak, our abbreviations were not sound based (sk8, l8tr, etc.), but more visually based, where you could "see" the "bones" of the word without extraneous vowels or letters. So, "thanks" became "thks", "you" became "u" (ok, that one is more sound based, but you do lipread "you" and "u" the same, so I'm still going to say it's visually based), "are" became "r", "could" became "cd ", "problem" became "plm" or "prblm" and so on. Below is a list of some of the most common TTY [Teletype] abbreviations.

Even though almost nobody uses TTYs anymore, those having finally been supplanted by VPs in the 2000s, many of us oldtimers still use TTYspeak in our texting. Hell, I've even inserted TTYspeak into my phone dictionary shortcuts as a way of saving time in my texting." (Grushkin, 2016)

Not surprisingly, text messaging also appears to be the significantly preferred form of communication of the younger generations of Deaf users in some areas of the world. (CBS News, 2020)

Image source: https://www.quora.com/Do-deaf-people-have-different-texting-slang-than-hearing-people?share=1

Fundamental considerations for voiced and signed language interpreters[1]

All of the above points render the interpreter's job more complex when tasked to interpret these graphicons in any setting. And this problem is unlikely to go away as more communication in all sectors of society, and in different forms of computer-based communication -- from texting to email to Facebook posts, etcetera -- rely on them. According to Slate, 92% of the online population uses emoji. As of 2016, 2.3 trillion mobile messages incorporate emoji *annually*. Also, these graphicons are no longer off-limits in digital communication in the workplace and other venues previously considered too formal for their

---

[1] For the purposes of this paper, we have chosen to align ourselves with Dr. D. Grushkin regarding the use of the terminology of signed and voiced languages. We will let him speak for himself here:

"There is no difference between "Sign language" and "signed language", really. It's more of a semantic choice made in order to raise consciousness and elevate the status of signed languages.

That is, we have been referring to "sign languages" for pretty much as long as signed languages have existed. However, "sign language" subtly devalues these languages, since you don't ever see anyone talk about "voice language". No — the languages used by Hearing humanity such as English, German, Tagalog, Hmong, and what have you — are always referred to as simply "languages". In contrast, signed languages are set off and marked with an implied sense that they are inferior for being communicated in the manual modality through the modifier "sign".

Consequently, some of us have decided to consciously place signed languages on a semantic par with voiced (**not** "spoken") languages by referring to them respectively as "signed" or "voiced". In this way, we emphasize that these are all equally languages; it's just that some are presented in the signed modality, while others are presented in the voiced modality.

You will note that I avoided using "spoken" as a descriptor. That is because this term also has been used to devalue signed languages: Hearing languages are "spoken", while Deaf languages are "signed". The problem with this is that while we are signing, we ARE *speaking* — in the sense that we are making an utterance to share information and ideas. Modality is irrelevant, and we want to emphasize that with our signed languages, we are performing the same functions that are performed in voiced languages. There is no need for Hearing people to have a monopoly on the term "speaking" or on the idea of "language ".

use. This increased level of use could mean that more court cases will involve testimony of this type. And that is exactly what we are seeing nowadays. Emoticons started appearing in court in 2004, and they have since been found most in sexual predation or sexual harassment cases. More recently, emoji have overtaken emoticons. Between 2004 and 2019, there was an exponential rise in emoji and emoticon references in US court opinions, with over 30 percent of all cases involving references to emoji appearing in 2018. (Lee, 2019)

Healthcare is another area where these graphicons are also becoming more prevalent. Symbols have been around in medical settings for quite some time. Take for example, the male/female or disabled bathroom symbol, or even the wifi symbol 🛜. The old zero to ten pain number scale has been replaced with graphics that go from sad to smiley faces. This visual scale was originally used with pediatrics and illiterate patients, but these graphicons have also allowed healthcare workers communicate with patients who speak a different language or who cannot talk (i.e., tracheostomy).
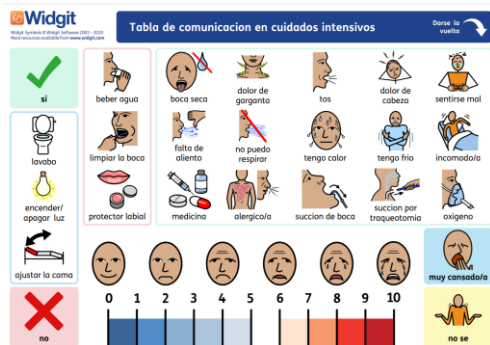

Image source: Downloaded from https://widgit-health.com/downloads/for-professionals.htm

In certain interactions between providers and LEP populations, some research has suggested that the use of emoji might also help to clarify communication between the providers and their LEP patients. but standardization across cultures of the emoji set would be recommended in this case. This could represent a challenge when we consider both language and cultural differences would need to be accounted for (What symbol do we put on an ambulance emoji? A cross? A crescent? Neither?).

There is, however, no doubt that symbols can facilitate communication. For example, here is an example of a spontaneous use of symbols to communicate with a patient when there was no shared language.

Picture source:
https://www.reddit.com/r/funny/comments/akkwn2/an_international_student_hospitalised_in_china/

While this effort was successful given the context in which it occurred, it might have backfired otherwise. Had the nurse had access to an internationally recognized and culturally vetted group of emoji, she may not have had to resort to using improvised symbols to create this message.

As a result, efforts are underway to create a set of useful medical emoji which work across platforms to facilitate communication of patient symptoms, hospital discharge instructions, and more. (Lai, D., Lee, J. 8., & He, S, 2021) In this case, emoji may also be useful for communicating treatment to children, neurodiverse people, and patients with communication issues. There is also no doubt that given the recent rise of telemedicine, emoji can be useful to use in the online messages arising out of this method of servicing patients. An example is the use of the emoji 👍 to encourage wearing of face masks.

Recommendation regarding emoji, emoticons, smileys, and stickers for signed and voiced language interpreters in legal settings

The most common situation where a legal interpreter will have to grapple with these graphicons is in sight translation. We recommend that any evidence that contains these graphicons be sight translated rendering any emoji as simply "emoji". To describe or name the exact type of emoji is not the interpreter's job, as doing so implies a preliminary determination on the part of the interpreter of the message's meaning which may very well be incorrect.

Example:
If sight translating this exchange between a potential buyer and a real estate professional (which for purposes of readability by all is in English here):

"Good morning 😊 Interested in the house 👨‍👩‍👧 👪 ✌️ 📎 … Just need to discuss the details… Ok, will wait to hear back from you, but need an answer in 48 hrs."

It is recommended that the interpreter render all the text into the appropriate target language, but for each emoji embedded simply say or sign "emoji". The end result would be as follows:

"Good morning emoji Interested in the house emoji emoji emoji emoji… Just need to discuss the details…
Ok, will wait to hear back from you, but need an answer in 48 hrs."

Furthermore, while this recommendation may not be within the interpreter's control, it is our strong recommendation that for any sight translation done in court, an accompanying exhibit of a large size is made to allow the jury to see the exchange in the source language and determine exactly which emoji are being used. It is up to the jury to determine both the specific type of emoji used and their meaning in context and the visual element is essential to making this determination.

Recommendation regarding emoji, emoticons, smileys, and stickers for signed and voiced language interpreters in medical settings

While we are keenly aware that these recommendations may be out of the interpreter's sphere of control, we strongly suggest that any emoji created for use in a medical setting to communicate with LEP patients be cross culturally vetted for appropriateness. Also, given that some patients may have low vision, we also suggest that these emoji be larger than regular emoji and made of colors that are easy to distinguish.

Interpreters in medical settings will most likely encounter these emoji in the sight translation of written documents, like instructions for procedures (e.g., pre-surgery), discharge instructions, or prescriptions. We recommend that the medical interpreter clarify the meaning of any emoji that could have more than one meaning to be sure that the communication is accurate given the potential dangers and the liability involved in not doing so.

Lead Authors

Holly Silvestri, DML, CLPM, The Community Interpreter Trainer, French, Spanish

Co-Authors

Hebba Abulsaad, State Court Certification, CHI-Arabic

Tram Bui, CMI (Vietnamese)

Giovanna Carriero-Contreras, The Community Interpreter-TOT Master Trainer and Author, Qualified Court Interpreter (Italian), CHI-Spanish

Ernesto Niño-Murcia, Federal and State Court Certification, Spanish

Gloria Rivera, State Court Certification, CMI, CHI-Spanish

Gabriela Siebach, MATI, CHI-Spanish

References

About emoji. (n.d.). Unicode. https://home.unicode.org/emoji/about-emoji/

CBS News. (2010, September 20). *For deaf, texting offers new Portal to world*. CBS News - Breaking news, 24/7 live streaming news & top stories. https://www.cbsnews.com/news/for-deaf-texting-offers-new-portal-to-world/

Ciesla, M. (2016, October 17). *Stickers versus Emojis: What is the difference?* User Experience Stack Exchange. https://ux.stackexchange.com/questions/100496/stickers-versus-emojis-what-is-the-difference

Commonwealth Braille and Talking Book Cooperative. (2005, February). *Unicode emoticons in braille*. https://cbtbc.org/braille/emoticons/

Cultureandlanguage.net [Interpretips]. (2021, June 24). *#8 EMOJIS, EMOTICONS AND SMILEYS – A PRIMER* [Video]. YouTube. https://youtu.be/GFwxbbxgwsI

Definition of emoji. (n.d.). Dictionary by Merriam-Webster: America's most-trusted online dictionary. https://www.merriam-webster.com/dictionary/emoji

Definition of emoticon. (n.d.). Dictionary by Merriam-Webster: America's most-trusted online dictionary. https://www.merriam-webster.com/dictionary/emoticon

Definition of Smiley. (n.d.). Dictionary by Merriam-Webster: America's most-trusted online dictionary.https://www.merriam-webster.com/dictionary/smiley

Deleted Author. (2019, January 27). *r/funny - An international student hospitalized in China and the nurse who couldn't speak English, informed him about his surgery with this note.* Reddit. https://www.reddit.com/r/funny/comments/akkwn2/an_international_student_hospitalised_in_china/

DeMarco, C. (2020, July 22). *Our cultural backgrounds influence how we interpret emojis, U of T study finds*. University of Toronto News. https://www.utoronto.ca/news/our-cultural-backgrounds-influence-how-we-interpret-emojis-u-t-study-finds

Facebook Messenger rolls out Soundmojis & India-specific data on emojis. (2021, July 1). Social Samosa. https://www.socialsamosa.com/2021/07/facebook-messenger-soundmojis-india-specific-data-emojis/

Freshtrax. (2015, May 28). *How Americans and the Japanese use emoji differently*. How Americans and the Japanese Use Emoji Differently freshtrax - btrax blog. https://blog.btrax.com/how-americans-and-the-japanese-use-emoji-differently/

Gao, B., & VanderLaan, D. P. (2020). Cultural Influences on Perceptions of Emotions Depicted in Emojis. *Cyberpsychology, Behavior, and Social Networking*. https://doi.org/10.1089/cyber.2020.0024

Goldman, E. Emojis and the Law 93 Wash. L. Rev.1227 (2018)

Gordon, M. (2021, March 22). *Emojis are increasing the possibility of translation mistakes in the workplace*. Daily Business Journal – A Record of Business.

Grushkin, D. (2016). *Do deaf people have different texting slang than hearing people?* Quora https://www.quora.com/Do-deaf-people-have-different-texting-slang-than-hearing-people?share=1

Harrison, S. (2019, November 26). *How Emojis have invaded the courtroom*. Slate Magazine. https://slate.com/technology/2019/11/emoji-court-cases-crime-free-speech-contract-law.html

Herzfeld, O. (2019, October 24). *The Legal Implications of Emoji*. Forbes. https://www.forbes.com/sites/oliverherzfeld/2019/10/24/the-legal-implications-of-emoji/?sh=4426af86bbd4

How Emojis are used around the world. (2016, March 11). TranslateMedia. https://www.translatemedia.com/us/blog-usa/how-emojis-are-used-around-the-world/

Kejriwal, M., Wang, Q., Li, H., & Wang, L. (2021). An empirical study of emoji usage on twitter in linguistic and national contexts. *Online Social Networks and Media*, *24*, 100149. https://doi.org/10.1016/j.osnem.2021.100149

Kirley, E. A., & McMahon, M. (2018). The Emoji Factor: Humanizing the Emerging Law of Digital Speech. *Tennessee Law Review*, *85*(2), 518-570. Retrieved September 17, 2021, from https://tennesseelawreviewdotcom.files.wordpress.com/2018/08/7-kirley_-mep-6-12.pdf

Lai, D., Lee, J. 8., & He, S. (2021). Emoji for the Medical Community—Challenges and Opportunities. *JAMA*, *326*(9). https://doi.org/10.1001/jama.2021.8409

Lai, M. (2016, September 3). *Usage of emojis as compared to stickers*. User Experience Stack Exchange. https://ux.stackexchange.com/questions/98855/usage-of-emojis-as-compared-to-stickers

Lee, D. (2019, February 18). *Emoji are showing up in court cases exponentially, and courts aren't prepared*. The Verge. https://www.theverge.com/2019/2/18/18225231/emoji-emoticon-court-case-reference

Lewis, V. (2017, August 7). *Texting etiquette for low vision*. Professional Development for Teachers of the Visually Impaired. https://www.perkinselearning.org/technology/blog/texting-etiquette-low-vision

Lewis, V. (2018, July 23). *How do people with vision impairments . . . Use emoji?* Professional Development for Teachers of the Visually Impaired. https://www.perkinselearning.org/technology/blog/how-do-people-vision-impairments-use-emoji

Okay Hand Gesture. (n.d.). Anti-Defamation League. https://www.adl.org/education/references/hate-symbols/okay-hand-gesture

Okuyama, Y. (2013). A case study of US deaf teens' text messaging: Their innovations and adoption of textisms. *New Media & Society*, *15*(8), 1224–1240.

Paigebuck, B., Spiliotopoulos, B. T., Vempaty, B. A., Singla, B. A., Jurgens, B. D., Emomeni, B., Zhong, B. C., Disheng, B., Arjun4787, B., & Park, B. J. (2013, July 1). *July 2013 –*. Follow the Crowd. https://blog.humancomputation.com/?m=201307

Peralta, E. (2016, April 12). *Lost in translation: Study finds interpretation of Emojis can vary widely*. NPR.org. https://www.npr.org/sections/thetwo-way/2016/04/12/473965971/lost-in-translation-study-finds-interpretation-of-emojis-can-vary-widely

Pilling, D., & Barrett, P. (2007, June 29). *Text communication preferences of deaf people in the United Kingdom*. OUP Academic. https://academic.oup.com/jdsde/article/13/1/92/500521

Rawlings, A. (2018, December 11). *Why emoji mean different things in different cultures*. BBCpage. https://www.bbc.com/future/article/20181211-why-emoji-mean-different-things-in-different-cultures

Scardino, C. (2015, October 15). *Technology ~ Deaf culture vs. hearing culture*. LinkedIn. https://www.linkedin.com/pulse/technology-deaf-culture-vs-hearing-chrissy-scardino/

Smiley. (n.d.). www.dictionary.com. https://www.dictionary.com/browse/smiley

Stephen, D. (2016, January 12). *Why your emojis are getting lost in translation and what you can do about it*. Duncan Stephen. https://duncanstephen.net/why-your-emojis-are-getting-lost-in-translation-and-what-you-can-do-about-it/

Steps to make animated emoticons. (2020, October 24). Scientific and technical portal. https://rdtk.net/software/steps-to-make-animated-emoticons/

Tang, Y., & Hew, K. F. (2019). Emoticon, Emoji, and Sticker Use in Computer-Mediated Communication: A Review of Theories and Research Findings. *International Journal of Communication*, *13*, 2557–2583.

Urban dictionary: Sticker. (n.d.). Urban

Dictionary. https://www.urbandictionary.com/define.php?term=Sticker